



#### Key Facts and Knowledge: Forces

Different **surfaces** create different amounts of **friction**. The amount of **friction** created by an object moving over a **surface** depends on the roughness of the **surface** and the object, and the **force** between them.

The driving **force** pushes the bicycle, making it move.



**Friction** pushes on the bicycle, slowing it down.



#### What will be our key questions?

- \*What are the different forces acting on objects to make them move?
- \*What are the effects of friction on different surfaces?
- \*Which objects are magnetic and which are non-magnetic?
- \*Do all magnets have the same strength?
- \*How do poles attract and repel?
- \*Which materials do magnets attract?

#### Key Vocabulary: Magnets

<b>magnet</b>	An object which produces a <b>magnetic force</b> that pulls certain objects towards it.
<b>magnetic</b>	Objects which are <b>attracted</b> to a <b>magnet</b> are <b>magnetic</b> . Objects containing iron, nickel or cobalt metals are <b>magnetic</b> .
<b>magnetic field</b>	The area around a <b>magnet</b> where there is a <b>magnetic force</b> which will pull <b>magnetic</b> objects towards the <b>magnet</b> .
<b>poles</b>	North and south <b>poles</b> are found at different ends of a <b>magnet</b> .
<b>repel</b>	<b>Repulsion</b> is a <b>force</b> that pushes objects away. For example, when a north <b>pole</b> is placed near the north <b>pole</b> of another <b>magnet</b> , the two <b>poles repel</b> (push away from each other).
<b>attract</b>	<b>Attraction</b> is a <b>force</b> that pulls objects together. For example, when a north <b>pole</b> is placed near the south <b>pole</b> of another <b>magnet</b> , the two <b>poles attract</b> (pull together).

#### Key Vocabulary: Forces

<b>forces</b>	Pushes or pulls.
<b>friction</b>	A <b>force</b> that acts between two <b>surfaces</b> or objects that are moving, or trying to move, across each other.
<b>surface</b>	The top layer of something.

- Key Threads:**
- \*compare how things move on different surfaces.
  - \*notice that some forces need contact between two objects, but magnetic forces can act at a distance.
  - \*observe how magnets attract or repel and attract some materials and not others.
  - \*compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
  - \*describe magnets as having two poles.
  - \*predict whether two magnets will attract or repel each other.

#### Pushes

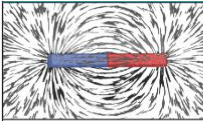

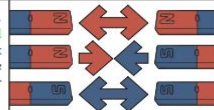


#### Pulls



**Forces** will change the motion of an object. They will either make it start to move, speed up, slow it down or even make it stop.

#### Key Facts and Knowledge: Magnets

	Like <b>poles repel</b> . Opposite <b>poles attract</b> .	
A <b>magnetic field</b> is invisible. You can see the <b>magnetic field</b> here though. This is what happens when iron filings are placed on top of a piece of paper with a <b>magnet</b> underneath.		The needle in a compass is a <b>magnet</b> . A compass always points north-south on Earth.



## Forces and Magnets– Star Steps



Focus	Small Steps	Comment	
Science: Working Scientifically	I can ask relevant questions and use different types of scientific enquiries to answer them  I can set up simple practical enquiries, comparative and fair tests	Self-Assessment : <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Teacher Assessment: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	I can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment  I can gather, record and classify data to answer questions	Self-Assessment : <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Teacher Assessment: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	I can record my findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Self-Assessment : <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Teacher Assessment: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	I can identify similarities and differences or changes related to simple scientific ideas and processes.	Self-Assessment : <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Teacher Assessment: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>



## Forces and Magnets– Star Steps

